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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,926	11/09/2001	Eric D. Morrison	456.003US1	5615

7590 12/23/2003
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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,926

Applicant(s)

MORRISON ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,8 and 10 is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s) _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

DETAILED ACTION

1. All outstanding rejection except for those described below are overcome by applicants' amendment filed 10/20/03.

The new grounds of rejection as set forth below are necessitated by applicants amendment and thus, the following action is final.

NOTE: In the amendment filed 10/20/03, claim 9 is indicated as cancelled but then the subject matter of the claim is recited. Did applicants mean to cancel claim 9? In light of the amendment, the claim is considered cancelled. Therefore, if the indication of cancellation (CANCELLED) was in error and applicants wish to claim the subject matter of claim 9, a new claim must be added.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites that "said polymer" has a weight average molecular weight between 50,000 and 150,000. However, in light of the amendment to claim 11 which now recites both first polymer and second polymer, the scope of claim 15 is confusing because it is not clear

which polymer is being referred to in claim 15, the first or second polymer. Clarification is requested.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 3-5, 11-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uytterhoeven et al. (U.S. 4,663,265) in view Baker et al. (U.S. 5,698,616).

The rejection is adequately set forth in paragraph 5 of the office action mailed 7/18/03 and is incorporated here by reference.

With respect to the newly added limitation that the treated colorant pigment particles comprise outer layer of first polymer which is derived from at least a nitrogen polymerizable monomer wherein the nitrogen atom is present in a functional group selected from the group consisting of amine groups, it is noted that Uytterhoeven et al. discloses pigment coated with polymer derived from monomers such as dimethylaminoethyl (meth)acrylate (col.4, lines 31-36, col., col.5, lines 28-32, and col.10, lines 8-43).

Response to Arguments

6. Applicants' arguments regarding Tsubuko et al. (U.S. 4,360,580), Hou et al. (U.S. 5,358,822), and Hopfenberg et al. (U.S. 3,904,562) have been considered but they are moot in view of the discontinuation of these references against the present claims.

7. Applicants' arguments have been considered but, with the exception of arguments relating to Tsubuko et al., Hou et al., and Hopfenberg et al., they are not persuasive.

Specifically, applicants argue that Uytterhoeven et al. is not a relevant reference against the present claims given that Uytterhoeven et al. disclose pigment that is coated with two polymeric materials that are chemically reacted while the present claims do not require that the nitrogen-containing polymer used to treat the pigment surface is chemically reacted with the second polymer contained in the organosol.

However, firstly, it is noted that there is no disclosure in Uytterhoeven et al. that the nitrogen-containing polymer is reacted with the polymer of an organosol. Uytterhoeven et al. disclose a pigment coated with polymer, i.e. nitrogen-containing polymer, which is then reacted with an additional polymer. While there is no disclosure in the present claims of treating the pigment with two polymers, in light of the open language of present claim 1, i.e. process "comprising", such reaction is clearly not excluded. Claim 1 requires pigment comprising outer layer of "first" polymer which is a nitrogen-containing polymer which is clearly met by Uytterhoeven et al. Further, it is noted that present claim 11 discloses colorant pigment particles surface treated by a second polymer. However, this does not exclude the pigment from further

treatment. That is, even though Uytterhoeven et al. disclose pigment treated with second polymer which is then further reacted with an additional polymer, the fact remains that Uytterhoeven et al. disclose pigment treated with second polymer and thus meets the limitations of the present claim 11.

It is noted that there is no disclosure in Uytterhoeven et al. of dispersing such treated pigment in organosol. This is why Uytterhoeven et al. is combined with Baker et al. which teaches dispersing pigment in organosol. The organosol is separate from the polymers associated with the pigment.

Applicants argue that the organosol disclosed by Baker et al. is not soluble in liquids having a Kauri-Butanol number greater than 30. However, it is noted that there is no requirement in the present claims that organosol is soluble in such solvent. The present claims require that the nitrogen-containing polymer dissolves in a solvent with Kauri-Butanol number greater than 30 which is disclosed by Uytterhoeven et al. (col.10, lines 39-43) and that the treated pigments are dispersed in organosol containing a polymer carried in a carrier liquid having Kauri-Butanol number less than 30 wherein such organosol is disclosed by Baker et al. (col.45, lines 15-18).

Applicants also argue that given that Uytterhoeven et al. and Baker et al. each disclose stable pigment dispersion, there is no motivation to combine the references.

However, there is no disclosure in Uytterhoeven et al. to prevent further improvement in stability. Further, Baker et al. disclose that dispersing pigment in organosol not only improves sedimentation stability of the pigment but also does so without comprising pigment quality.

Baker et al. further disclose that dispersing pigment in organosol also allows for improved redispersion characteristics upon settling.

Thus, it is the examiner's position that there is good motivation to combine Uytterhoeven et al. with Baker et al.

Allowable Subject Matter

8. Claims 6, 8, and 10 are allowable over the "closest" prior art Uytterhoeven et al. (U.S. 4,663,265), Hou et al. (U.S. 5,358,822), Baker et al. (U.S. 5,698,616), and Hopfenberg et al. (U.S. 3,904,562) for the following reasons:

Uytterhoeven et al. process for making liquid ink, i.e. developer, comprising the steps of dissolving polymer in solvent with Kauri-Butanol number greater than 30 such as ethanol, dispersing pigment particles in the polymer solution to form pigment dispersion, removing solvent to form treated pigment, and then dispersing the treated pigment in carrier liquid which has Kauri-Butanol number less than 30 such as aliphatic hydrocarbon. However, Uytterhoeven et al. disclose producing treated pigment by removing solvent from the pigment dispersion which is in direct contrast to the claims 6, 8, and 10 which require precipitating the treated pigment from the dispersion to produce treated pigment with polymer precipitated thereon.

Baker et al. disclose process for making liquid ink composition by dispersing colorant in organosol containing carrier liquid with Kauri-Butanol number less than 30. However, there is no disclosure of treated pigment comprising pigment with polymer precipitated thereon as required in claims 6, 8, and 10.

Hopfenberg et al. disclose organic pigment with uniform coating of vinyl pyrrolidone polymer wherein the polymer is precipitated onto pigment by adding pigment to aqueous solution of polymer followed by precipitating the polymer onto the surface of the pigment to encapsulate the pigment. However, there is no disclosure of organosol and thus, no disclosure that that the pigment is dispersed in organosol comprising second polymer as presently claimed. Further, Hopfenberg et al. disclose that the pigment is coated with vinyl pyrrolidone polymer which is outside the scope of the claims 6, 8, and 10 which require that the pigment is treated with polymer comprising units derived from at least one nitrogen polymerizable monomer wherein the nitrogen atom is present in a group selected from amine groups.

Hou et al. disclose method for making liquid ink, i.e. liquid toner, comprising the steps of dissolving polymer such as polyamide having molecular weight of, for instance, 50,000 in solvent with Kauri-Butanol number greater than 30 such as methanol, ethanol, and propanol, dispersing pigment particles in the polymer solution to form pigment dispersion, precipitating treated pigment, and dispersing treated pigment in carrier liquid which has Kauri-Butanol number less than 30 such as aliphatic hydrocarbon. However, there is no disclosure of organosol and thus, no disclosure that that the pigment is dispersed in organosol comprising second polymer as presently claimed. Further, Hou et al. teach pigment treated with polyamide which outside the scope of claims 6, 8, and 10 which require that the pigment is treated with polymer comprising units derived from at least one nitrogen polymerizable monomer wherein the nitrogen atom is present in a group selected from amine groups.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

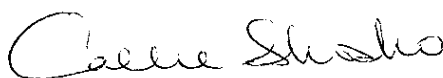
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in cursive script, reading "Callie Shosho".

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
12/12/03